The Afghanistan Engineering Support Program assembled this annual report. It is an approved, official USAID document. Budget information contained herein is for illustrative purposes. All policy, personal, financial, and procurement sensitive information has been removed. Additional information on the report can be obtained from Firouz Rooyani, Tetra Tech Sr. VP International Operations, (703) 387-2151.

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FROM THE AMERICAN PEOPLE

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

Contract No. EDH-I-00-08-00027-00
Task Order No. 1

Fiscal Year 2016 Annual Report

October 09, 2016

This publication was produced for review by the United States Agency for International Development.
It was prepared by Tetra Tech, Inc.

This report was prepared for the United States Agency for International Development, Contract No. EDH-I-00-08-00027-00, Task Order 01, Afghanistan Engineering Support Program.

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October 09, 2016

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Office of Economic Growth and Infrastructure (OEGI)
U.S. Agency for International Development
Great Massoud Road
Kabul, Afghanistan

Re: Contract No. EDH-I-00-08-00027-00 / Task Order No. 1
Afghanistan Engineering Support Program (AESP)

Fiscal Year 2016 Annual Report

Dear [redacted]

Tetra Tech (Tt) is pleased to submit this Annual Report for fiscal year (FY) 2016, as provided in section C.5, "Deliverables," paragraph D of the above referenced Task Order. The FY 2016 Annual report covers the period of October 1, 2015 to September 30, 2016 for Year 7 of this Task Order.

FY 2016 proved to be an important year for AESP. Throughout Year 7, Tetra Tech fully engaged its new scope and direction to provide Construction Management (CM) and Quality Assurance (QA) services for the PTEC program, the American University of Afghanistan Women's dormitory, and the Kajaki Hydroelectric Power Plant (HPP). Tetra Tech quickly hired and mobilized new staff to more than double our existing local national workforce in support of USAID's new focus on CM and QA.

AESP takes particular pride in being part of the team to finish the Kajaki HPP Unit 2 Installation project. This project was 60 years in the making and Tt feels immense pride in providing the QA and CM services to finally finish the project. Once the SEPS high voltage transmission grid is rehabilitated, the improved Kajaki HPP will deliver high quality electrical power to approximately 1 million people in Southern Afghanistan. Further details about the Kajaki HPP can be found in our success stories section.

We look forward to continuing our support of the USAID OEGI mission as Tt transitions to the new Engineering Support Program (ESP), and to continue strengthening our partnership while building a brighter future for Afghanistan.

Please contact me at your convenience should you have any questions or comments regarding this report.

Respectfully,
Tetra Tech, Inc.

[redacted]
Chief of Party (AESP)

cc: [redacted]

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

Contract No. EDH-I-00-08-00027-00
Task Order No. 1

Fiscal Year 2016 Annual Report

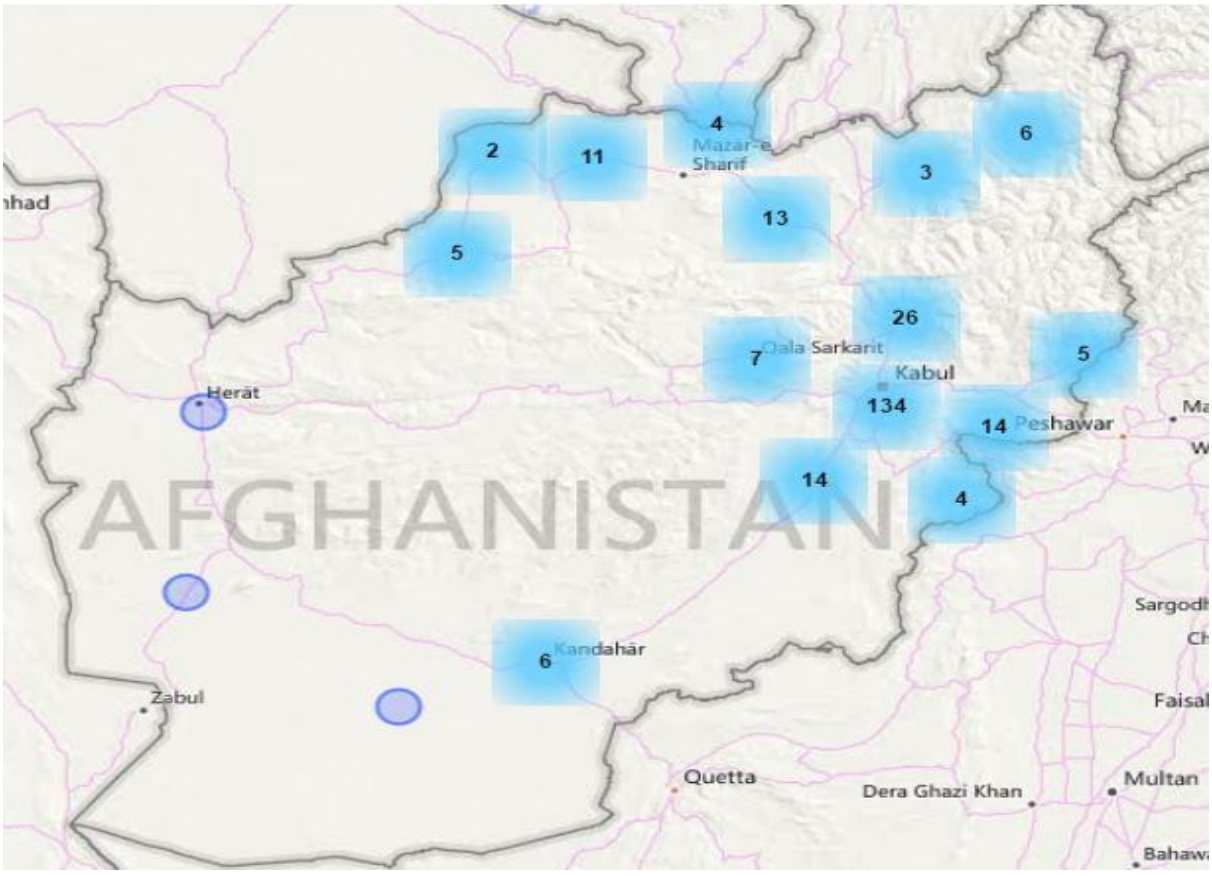
October 09, 2016

PROJECT OVERVIEW

The Tetra Tech (Tt) Afghanistan Engineering Support Program (AESP) provides planning, design, engineering, and technical oversight support to Afghanistan through collaboration and coordination with the United States Agency for International Development (USAID), Afghanistan Office of Economic Growth and Infrastructure (OEGI). Through AESP work, Tt contributes to local national capacity building by mentoring and providing international caliber experience to our local national staff and partners. Tt AESP performs activities that complement and reinforce the activities and engineering expertise of USAID OEGI staff in the following sectors: Energy, Transportation, Vertical Structures, Water and Sanitation.

Tt AESP consists of a Kabul-based core of expatriate engineering professionals that lead a competent staff of local Afghan engineers and support professionals. Support professionals include highly-qualified US-based staff, or "reachback" staff, who assist AESP from Tt's home office. Our teams, both locally and in the United States, continue to display adaptability, mobility, and responsiveness to the needs of USAID.

- Activity Start Date: November 9, 2009
- Activity End Date: November 8, 2016
- Prime Implementing Partner: Tetra Tech, Inc.
- Teaming Partners/Sub-awardees: Power Engineers, GardaWorld, USACC, SMART Engineers
- Geographic Coverage: Afghanistan, see Figure 1 below



*The light blue squares represent multiple projects. The purple circles represent a single project.

Figure 0-1 2009 – 2016 Tt AESP Project Locations[1]

[1] Map Source: Tt AESP's Afghan Info Reporting Site

EXECUTIVE SUMMARY

This report covers the period from October 1, 2015 to September 30, 2016. During this period, Tt AESP submitted over 500 deliverables to USAID. Key deliverables submitted this year include completion of Da Afghanistan Breshna Sherkat (DABS) Request for Proposals (RFPs) and associated Technical Scopes of Work in support of PTEC energy projects. AESP provided guidance to the DABS bidding process and drafted corresponding Bid Evaluation Reports (BER). These combined RFPs BER's will exceed [redacted] in new energy infrastructure for Afghanistan. Other important deliverables include 37 Quality Assurance (QA) and Construction Management Services (CMS) Bi-weekly and Weekly reports. Additionally, AESP completed all of the documents which comprise the Kajaki HPP Base Life Support services (BLS) including, helicopter transport logistics and security for the Kajaki HPP Unit 2 Installation project.

This year AESP solidified its new role of providing Quality Assurance (QA) and Construction Management (CM) services on USAID's major infrastructure projects. Furthermore, Tetra Tech (Tt) was awarded the Engineering Support Program (ESP) which will continue the work of AESP for the next three to five years. During Quarter (Q) 4 of fiscal year (FY) 2016, AESP began the process of transitioning project work to ESP while closing down AESP activities.

Highlights of the 2016 fiscal year, within each sector noted below, exemplify AESP's diverse support of the USAID OEGI mission in Afghanistan.

Summary of Results for the Reporting Period and Key Accomplishments

Energy Sector

Afghanistan has long suffered from the aftereffects of years of conflict and lack of investment in energy infrastructure. As a result, a large portion of the country lives without access to reliable power, further limiting development efforts. USAID has made a priority to bring stable power to Afghanistan. This priority is reflected in Tt AESP's work, as the majority of efforts in FY2016 were directed towards supporting USAID through energy-related work orders. AESP had 17 active long-term work orders (WO-LT) and five administrative work orders (WO-A) in the Energy sector. The most significant efforts went towards the Kajaki Hydroelectric Power Plant and the Power Transmission Expansion and Connectivity (PTEC) Program, which are further described below.

Throughout Year 7, AESP continued to build and exemplify its depth in the Energy sector. Energy services provided during FY 2016 ranged from: inspection of failed powerlines, providing extensive bidding services to Da Afghanistan Breshna Sherkat (DABS), mentoring DABS in their daily activities, construction quality assurance (QA), and construction management (CM) services.

Kajaki Hydroelectric Power Plant (HPP)

AESP continued to prioritize the completion of Unit 2 at the Kajaki Hydroelectric Power Plant at the Kajaki Dam in Helmand Province. Once completed, the Kajaki Dam will be capable of providing 51.5 MW of electric power, becoming the largest source of power for Southern Afghanistan.

With the Notice to Proceed (NTP) on WO-LT-0093: Kajaki HPP Construction Management Services (CMS), AESP oversaw the demobilization of the previous Owner's Engineer and assumed Kajaki HPP site management duties which included: camp security, logistics, and base life support (BLS). Tt brought much needed site improvements and made the necessary preparations to continue work during the planned long power outage in Q4.

AESP also continued the role of Owner's Engineer for DABS, providing QA oversight and CM services for installation of the Kajaki HPP Unit 2, along with electrical and mechanical upgrades to the existing Units 1 and 3. As Owner's Engineer, Tt AESP staff reviewed engineering and material submittals, provided engineering recommendations and QA oversight, attended weekly meetings, witnessed QA/QC tests, attended factory acceptance tests (FAT), coordinated daily onsite activities, provided

Kajaki operational evaluations, conducted technical assessments, helped 77CC and DABS operate the plant, oversaw DABS training, provided QA services for day-to-day construction activities, and monitored project cost and schedule.

Tt AESP focused on working with the contractor 77CC to streamline and restructure the construction schedule to complete active construction work on schedule and retain a high quality end product. Active construction work completed in FY2016 included the commissioning of the new Unit 2 turbine and generator, and the commissioning of existing Units 1 and 3 with new electrical and mechanical upgrades. Lastly, all three Kajaki HPP turbine generator units were synchronized and connected to the SEPS 110 kV high voltage power grid.

Power Transmission Expansion and Connectivity (PTEC)

The PTEC Program has been a priority for USAID OEGI. A major component of PTEC is connecting the Northeast Power System (NEPS) to the Southeast Power System (SEPS). The NEPS-SEPS Connector will create, for the first time, a 220 kV high voltage connection from Northern to Southern Afghanistan. The connection will allow Southern Afghanistan to secure imported power from Afghanistan's neighboring countries to the North.

During this year, AESP had 15 active work orders related to the development of the NEPS and SEPS electrical systems. Work included providing bidding services for the remaining segments of the NEPS-SEPS connector (seven transmission line segments and seven substations), the Kandahar Solar Photovoltaic Plant, and the Salang Tunnel Substation. However, the majority of PTEC efforts in FY2016 went towards WO-LT-0090, 0091 and 0092 for construction of the NEPS-SEPS Connector.

At the commencement of FY2016, WO-LT-0090: NEPS-SEPS Interim QA Monitoring & Evaluation and WO-A-100: Interim QA/QC Monitoring and Evaluation and Construction Management Services provided the foundation for what would become WO-LT-0092 and its companion Amendments (AMD) 1 and 2. The three LT-0092 work orders provided USAID with PTEC program management, Quality Assurance (QA) and Construction Management Services. Under WO-LT-0092 and its amendments, Tt AESP focused on providing construction support services to the Arghandi-Ghazni Transmission Line and Sayedabad and Ghazni substations. In FY 2016, significant progress was seen on the Arghandi-Ghazni Transmission Line, including the completion of: 85 km of optical pilot overhead ground wire (OPGW) stringing, 85 km of double circuit, double conductor 3-phase stringing and 415 lattice steel 220 kV high voltage transmission towers. Construction activities at the substations continued for foundations and equipment installation, elevated steel gantries, roadways, drainage, and the switchgear control buildings.

Under WO-LT-0091: SEPS Completion, AESP prepared the electrical designs and contractual bidding documents necessary for the completion of SEPS 110 kV transmission lines and substations in Kandahar and Helmand Provinces. AESP submitted revised, complete RFPs for the transmission line and substation portions of this work order. Furthermore, Tt completed AMD 1: Kajaki-Durai Junction Transmission Line load flow study to determine whether the existing 110 kV line from the improved Kajaki Hydro Power Plant (HPP) to Durai Junction Substation could carry 51.5 Megawatts (MW) of power.

Transportation

Tt AESP had one active transportation work order in FY 2016, reviewing designs and construction submittals, providing technical analyses, and creating construction design plans for the Gardez to Khost road under WO-LT-0084.

For AESP Work Order LT-0084: Gardez to Khost (GK) Road, Phase 4, Tt Kabul and Tt Reachback provided engineering reviews of the contractor's bridge design drawings and as-built bridge shop drawings for five existing bridges that were refurbished, plus redesign of two new bridges within this road project. Tt Kabul also created bound as-built record sets of the road and bridge structures for

USAID. The creation and delivery of the bound bridge record drawings signified the completion of the 100 KM GK Road project, one of the most significant Afghan highway projects completed by USAID to date. AESP's work products also included 452 submittal reviews and 28 weekly progress meetings attended. This work order was completed during FY 2016.

Vertical Structures

AESP had four active work orders in the Vertical Structures Sector, which were all related to the design and construction of structures to support healthcare and women's education in Afghanistan.

Under WO-LT-0082, AMD 1 and 3, Tt performed design review and construction QA services for the new women's dormitory at the American University of Afghanistan (AUAF). Tt reviewed the 35%, 65%, 99%, and 100% contractor design submittals; geotechnical report; and submittal register for WO-LT-0082 AMD 1: The American University of Afghanistan, 200 bed Women's Dormitory.

Figure 0-2 Completion of Bridge No. 9 on the Gardez-Khost Road

Additionally, AMD 3 of WO-LT-0082 provided Quality Assurance (QA) services during the construction of the dormitory. Tt's activities included: performing daily QA and H&S inspections onsite, witnessing material tests, and providing USAID recommendations for acceptance of construction submittals.

Furthermore, AESP provided design review and construction QA services for the installation of fire doors at Sardar Kabuli Girls High School under WO-LT-0082 AMD 2 and verification of mechanical systems at Gardez and Khair Kot Hospitals with WO-A-106.

Water Resources

AESP had no active work orders in either the Water or Sanitation Sectors.

Technical Support and Oversight

Technical Support and Oversight work orders allow AESP to provide technical assistance and solutions to USAID as the need arises, often spanning multiple sectors. Technical Support and Oversight Services work orders exhibit AESP's flexibility, mobility, depth of technical knowledge, and an enduring commitment to capacity building and gender equality.

During FY 2016, AESP had four active work orders to provide additional technical support to USAID. WO-LT-0065 provided media assistance to USAID. Tt submitted weekly and biweekly photos demonstrating the progress of construction on AESP's WOs.

The Afghan Women Internship Program, under long term Work Order WO-LT-0042 AMD 4 and 5, exemplifies AESP's commitment to capacity building and gender equality. The Afghan Women Internship Program supports the technical and professional development of female students in their final years of university engineering studies. Under the direct supervision and mentorship of Tt professional staff, both expats and local professionals, the program provides opportunities for woman interns to receive practical training, gain exposure to real-world engineering experiences, and strengthen their communication skills. During FY 2016, the four 2015 interns completed their internship. Subsequently, AESP expanded the Woman Internship Program in FY 2016 when eight female engineering interns joined the program for the 2016 academic year. The internship's variety of activities gave the women diverse experiences necessary to be competitive and prepared for when they enter the job market.

Capacity Building

Tetra Tech AESP is committed to USAID's mission of capacity building. Since the inception of the task order, Tt AESP has focused on training AESP's local staff to operate at internationally accepted levels, not only in their chosen professions, but also in cross-discipline professional skills such as: communication, public speaking, teamwork, and critical thinking. Due to Tt's commitment to capacity building, the constitution of the staff has gradually shifted from a mostly expatriate staff to a highly capable local national staff, which comprises an average 83% of Tt's employees throughout FY2016. After the transition to ESP, AESP maintained local national staff levels at 80% of total staff.

During FY 2016, Tt's management staff held regular "all hands meetings" for capacity building through training in teamwork, leadership, public speaking, and communication. Accordingly, Tt's professionals took a more active role in growing DABS' abilities by providing advice in the bid openings and evaluations process and embedding a PM advisory team within the DABS headquarters office.

Constraints and Critical Issues

Although security concerns did not prevent Tetra Tech AESP from completing its mission this year, security remained a significant concern. AESP has seen an increased number of teams going into the field to fulfill QA inspection auditing and CM activities, often to areas where security is a major concern. To bolster security, Tetra Tech increased security efforts through more extensive daily security briefings and closer involvement of Tt's Security Team in logistical planning. AESP adopted a "watch and ward" security method for field personnel. Tetra Tech will continue to respond to evolving security challenges in order to ensure the safety of our personnel until project completion.

Kinetic activity that occurred along the Arghandi-Ghazni Transmission Line during FY 2016 resulted in battle damage to select structures. Tt will continue to monitor such events to identify causal relationships and provide recommendations for mitigation.

As part of ongoing work at the Kajaki HPP, Tt's Security Team continued to coordinate with Afghan Public Protection Forces (APPF) and Afghan National Army (ANA) to remain vigilant and aware of security threats in the area. Thus far, security concerns have not significantly impacted Tt field operations at the Kajaki HPP.

Conference facilities at the Tt Villa remained available as a practical option for USAID to hold business meetings with other implementing partners and Afghanistan stakeholders. Using the Tt Villa facilities mitigates the security risks associated with travel around Kabul during periods of unpredictable insurgent activity.

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ACRONYMS

A	Administrative
A/E	Architect and Engineer
AESP	Afghanistan Engineering Support Program
AIDAR	USAID Acquisition Regulation
AMD	Amendment
AUAF	American University of Afghanistan
ADB	Asian Development Bank
BOQ	Bill of Quantity
CM	Construction Management
CMMS	Computerized Maintenance Management System
CMS	Construction Management Services
CPARS	Contractor Performance Assessment Report
DABS	Da Afghanistan Breshna Sherkat
DCAA	Defense Contract Audit Agency
DOC	Development Outreach and Communication Office
EB	Estimated Budget
GK	Gardez to Khost Road
IBC	International Building Codes
LN	Local National
LOE	Level of Effort
LT	Long-term
NEPS	Northeast Power System
NTP	Notice to Proceed
OEGI	Afghanistan Office of Economic Growth, and Infrastructure
POC	Point of Contact
PTEC	Power Transmission Expansion, and Connectivity
QA	Quality Assurance
QA	Quality Control
RFIs	Request for Information
RFPs	Request for Proposals
ROM	Rough Order of Magnitude cost estimate
SCADA	Supervisory Control and Data Acquisition
SEPS	Southeast Power System
SIVs	Special Immigration Visa
SOO	Statement of Objective
SOW	Scope of Work
SOW	Statement of Work
TPP	Thermal Power Plant
Tt	Tetra Tech
USACE	United States Army Corps of Engineers
USAID	United States Agency for International Development
USD	United States Dollars
WB	World Bank
WP	Work Plan

1.0 ACTIVITY IMPLEMENTATION

1.1 KEY ACTIVITIES ACCOMPLISHED DURING THE YEAR

Tt AESP is responsible for identifying, planning, designing, and providing technical support and oversight of USAID OEGI infrastructure projects and related engineering activities. In accordance with the basic USAID OEGI Architect and Engineer (A/E) IQC contract statement of work, AESP creates work orders to track individual projects.

Work orders fall into one of two categories: administrative (A) or long-term (LT). Administrative work orders are defined as tasks requiring a total level of effort (LOE) less than or equal to 18 business days (144 work hours). Long-term work orders are defined as activities requiring a total LOE exceeding 18 business days. For each long-term work order, Tt AESP prepares and submits a Work Plan (WP) and an Estimated Budget (EB). This year, AESP supported USAID Afghanistan's mission with seven administrative and 25 long term work orders.

For tracking purposes, work orders are broken into one of the following sectors as stated in Tt AESP's IQC: Energy, Vertical Structures, Transportation, Water Resources, and Water and Sanitation. When a work request falls outside the sectors above, it is classified as Technical Services. This year, Tt AESP provided support under 22 work orders in the Energy sector, one work order in Vertical Structures, five Transportation work orders, zero Water Resources work order, and four Technical Services work orders. Hence, the majority of AESP work orders and subsequent activities were related to the energy sector for fiscal year 2016. Table 1.1 below describes the work order activities performed during the year.

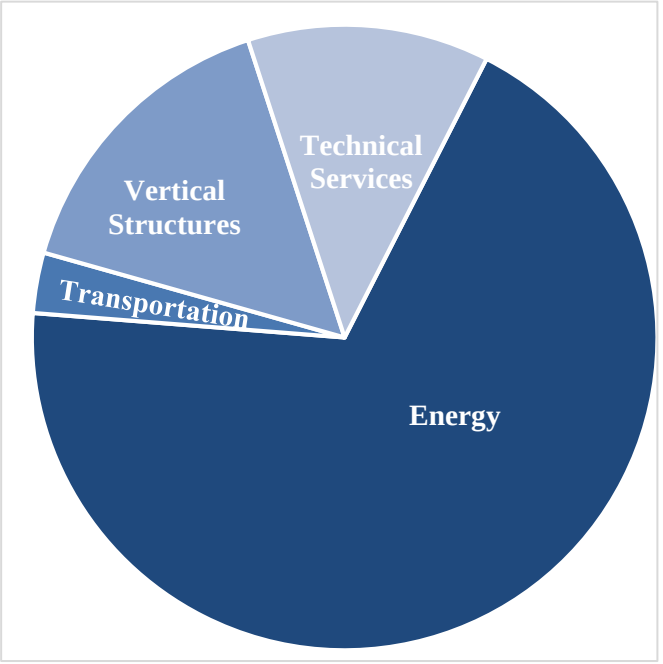


Figure 1-1: AESP Work Orders by Sector

1.1.1.1 Table 1.1 Summary of Work Completed During Fiscal Year 2016

Number	Work Order Title	Summary of Work Completed
WO-A-0100	Interim QA/QC Monitoring & Evaluation and Construction Management Services	In FY2016 Tetra Tech provided interim CMS oversight for the Arghandi-Ghazni transmission line and the Sayedabad and Ghazni substation work currently underway. This included a team of onsite inspectors, review of submittals by the Contractor, and chairing of weekly meetings. This work was shifted to WO-LT-0092 AMD 2 when it received NTP on January 5, 2016.

WO-A-0101	Tarakhil Power Plant SCADA Upgrade Review	Tetra Tech received NTP for the review on November 23, 2015. Tt submitted to USAID a technical memo reviewing the proposed Work Plan and Schedule created by DABS on December 10, 2015. Additionally, Tt further reviewed and submitted additional comments to the proposed work plan and schedule on February 24, 2016. This work order remained open throughout Q3, awaiting action from DABS to perform the upgrades. No upgrades were performed and this work order was closed on May 23, 2016.
WO-A-0102	DABS Coordination Retreat	Tetra Tech sent a received concurrence to Tt's Confirmation Letter to USAID on January 21, 2016. The DABS-USAID Coordination retreat was held on January 23, 2016. The minutes of the retreat were distributed on January 31, 2016 and this WO was closed on February 3, 2016.
WO-A-0103	Bulk Metering Bid Assistance	Tetra Tech sent a Confirmation Letter to USAID on February 25, 2016 and received USAID concurrence on the same day. Bid evaluation began on February 27, 2016, and continued until March 31, 2016. This work order was closed on May 2, 2016.
WO-A-0104	DABS 220 kV Transmission Line Tower Inspection	Tetra Tech sent a Confirmation Letter to USAID on March 19, 2016 and received USAID concurrence on March 21, 2016. Tetra Tech submitted a draft Investigation Report to USAID on April 17, 2016. This report contained a list of additional information required from DABS in order to conduct a more comprehensive analysis. Though not all of this information was received, Tetra Tech submitted the Final Investigation Report to USAID on June 6, 2016. This WO was closed on July 18, 2016.
WO-A-0105	Arghandi-Ghazni 220kV Transmission Line Power Supply Site Visits	Tt Engineers conducted site visits to Chimtala and Arghandi substations, on April 10 and 13, 2016, respectively. Following these site visits, Tetra Tech identified a proposed workaround for providing a temporary power supply to the Arghandi-Ghazni 220kV Transmission Line. The workaround was described in the Temporary Power Supply Arrangement Technical Memo, submitted to USAID on May 1, 2016. This work order was closed on May 9, 2016.
WO-A-0106	Inspection/Verification of Outstanding Punch List Items Rectification and Witnessing T&C of Systems at Gardez and Khair Kot Hospitals	Tetra Tech submitted the Confirmation Letter for WO-A-0106 on June 12, 2016 and received NTP from USAID on June 21, 2016. Tetra Tech Inspection Teams visited Gardez 100-Bed Hospital on June 25 and visited Khair Kot 20-bed hospital on June 30, 2016. Tt sent the report, addressed USAID comments and submitted a subsequent revised report on August 2, 2016.

WO-LT-0042 AMD 4	Afghan Women Internship Program	In FY 2016, Tt received approval for the WP and EB for the AMD 4 extension on November 04, 2015. The interns completed their curriculum in software trainings, hands-on experience, and on-the-job training and graduated in January of 2016. The Final Report for this Work Order was submitted to USAID on February 17, 2016.
WO-LT-0042 AMD 5	Afghan Women Internship Program	Tt submitted the WP and EB for AMD5 on December 07, 2015 and received NTP on December 29, 2015. Under AMD 5, seven new female interns and one intern from the previous academic year's internship program, joined Tt AESP. Interns received trainings in: applicable software, hands-on-training, observation of Tt Engineers, and materials testing. This work transitioned to ESP on August 27, 2016.
WO-LT-0048 AMD 4 and 6	Qarabagh to Kandahar East Five Substations - RPC At Kabul and Kandahar East	In 2016, bids were received in response to a tender for the five substations and reactive power compensation in Kabul and Kandahar East. A Bid Evaluation Committee (BEC) was formed by DABS. Tt acted as an observer and, when requested, as an advisor to the BEC. Tt attended all BEC meetings and assisted in preparing the Bid Evaluation Report (BER). The draft contract was sent to USAID for review on June 14, 2016. USAID provided comments on the draft contract and sent the On Budget Monitor (OBM) consent letter on June 20, 2016. This work transitioned to ESP on August 27, 2016.
WO-LT-0048 AMD 5	Transmission Line from Ghazni to Kandahar East	DABS re-bid this project and received and opened bids under the new law as required by NPA. Tt acted as an observer and, when requested, as an advisor to the BEC. Tt attended all BEC meetings and assisted in preparing the BER. DABS Procurement verified documents submitted by the bidders. The draft final BER was sent to USAID for review on June 30, 2016. This work transitioned to ESP on August 27, 2016.
WO-LT-0059	NEPS System Protective Relay	USAID requested a WP and EB to deliver protective relaying coordination studies to key portions of Afghanistan's NEPS medium voltage and high voltage electrical grid. This work continued to be on hold throughout FY 2016 and was closed May 23, 2016.
WO-LT-0063 AMD 8	Salang Tunnel Substation Combined RFP and Transformer Vector Modification	DABS posted the RFP on their Procurement website on September 8, 2015. Requests for Information (RFIs) were processed by AESP in Q1. Bids were submitted to DABS on November 29, 2015 and DABS' Procurement Department completed bidder verification on March 30, 2016. Tt continued to provide bid

		assistance to DABS as observers to contract negotiations and in coordinating submission of the final Bid Evaluation Report and final negotiated contract to USAID, including the incorporation of USAID comments into both documents.
WO-LT-0065	Media Assistance	This year, Tt submitted construction progress photos of the Kajaki HPP, Arghandi-Ghazni transmission lines and substations, and other active work orders on a bi-weekly basis. Tt also submitted weekly photos of site construction per USAID's request. This WO was transitioned to ESP on 8/27/2016.
WO-LT-0070 AMD 4	Tarakhil Power Plant Power Block A, B and C Controls Repair	This work order was on-hold throughout FY 2016 and was closed on May 23, 2016.
WO-LT-0070 AMD 6	Phoenix Support at Tarakhil	Tt was asked to provide technical assistance to Phoenix at the Tarakhil Power Plant. This work order continued to be on hold throughout FY 2016 and was closed on May 23, 2016.
WO-LT-0082	Engineering Support for Vertical Structures	Tt Reachback completed a design review of Sabez School on December 7, 2014. This WO was closed in the second quarter of FY 2016.
WO-LT-0082 AMD 1	American University of Afghanistan (AUAF) Women's Dormitory	USAID asked Tt to provide engineering design review and construction phase technical review services for the new 200 bed Women's Dormitory at the American University of Afghanistan (AUAF). Tt submitted the 65% Design Development package to USAID on January 21, 2016. On March 02, 2016 Tt submitted the 65% civil / site utilities' package to the USAID. Tt submitted the construction schedule on March 14, 2016, the Geotechnical Investigation Report on March 17, 2016, the 99% civil / site utilities' on March 26, 2016 and 19 construction submittals on March 17, 2016 for USAID final consideration.
WO-LT-0082 AMD 2	Sardar Kabuli Girls' High School Fire Door Replacement Quality Assurance Services	AESP received NTP for this Work Order on March 16, 2016. Tt performed QA inspections and provided daily reports to USAID on all of the contractor's onsite progress from June 2, 2016 throughout FY2016. The contractor received a 90 day extension in order to repair and paint the doors.
WO-LT-0082 AMD 3	American University of Afghanistan Women's Dormitory Quality Assurance	Tt field QA staff mobilized to the construction site on May 26, 2016. Tt is providing monitoring and reporting of the contractor's compliance to and implementation of approved plans. Construction activity focused on: excavation of the sewer system, fuel tank pad, and transformer pad; electrical line trench and backfilling of the sewer trenches; and commencement of foundation works.

WO-LT-0083	Kandahar Solar Photovoltaic Feasibility Study	Tt supported USAID with a high level desktop study of photovoltaic options to replace approximately 30% of the kWh of diesel-generated power with solar power. This WO was closed in the fourth quarter.
WO-LT-0083 AMD 3	Kandahar Solar Transaction Assistance	Tt responded to a series of inquiries from USAID about the feeders for a solar photovoltaic system in Kandahar. Tt provided comments on the commissioning, feeder chronology, and synchronizing relays. Additionally, Tt participated in the technical bid evaluations for installation, operation and maintenance of 10MW Solar System in Kandahar. Tt completed the technical evaluation for all bidders, including submission of the Final Evaluation Report to USAID. This work order was closed on May 30, 2016.
WO-LT-0084	G-K Road Phase 4	Throughout FY 2016, AESP continued to support OEGI through the review of Contractor as-built shop drawing submittals for Phase IV of the GK roadway and bridge construction. Tt reviewed as-built drawings of two new bridges and made the final submittal of all required contractual deliverables for this work order. This work order was closed on April 25, 2016.
WO-LT-0090	NEPS-SEPS Interim QA Monitoring and Evaluation Service	This quarter, Tt submitted four biweekly and four monthly reports to USAID. The energy team participated in factory acceptance tests (FATs) for parts quality assurance of the following Arghandi to Ghazni transmission line and substations projects. During Q4, this work was transferred to WO-LT-0092 AMD 1.
WO-LT-0091	SEPS Completion	Tt submitted revised bidding documents to USAID, DABS, and NPA for solicitation and upload to the NPA website. Tt continued to provide bid assistance to DABS through processing technical RFIs. Tt participated as an observer to the BEC starting on June 8, 2016 for both the substations and transmission line bid evaluations. Preliminary, technical, and financial evaluations continued throughout Q3 and Q4 of FY 2016.
WO-LT-0091 AMD 1	Kajaki-Durai Junction Transmission Line	Tt received NTP to provide a load flow study to determine whether the existing 110kV line from Kajaki HPP to Durai Junction Substation can carry 51 MW. Tetra Tech submitted the Overall Technical Assessment, which included the deliverables for Tasks 1-4 in the Appendices. The Overall Technical Assessment was revised several times based on USAID comments and submitted and submitted to USAID. This WO was closed in Q3.

WO-LT-0092	NEPS-SEPS Construction Management Services	As part of this base Work Order, Tetra Tech provided electronic document management services (EDMS) to PTEC and Kajaki projects. Tt implemented the ProjectWise system for Kajaki and continued set up of ProjectWise for Arghandi-Ghazni Transmission Line and Ghazni and Sayedabad substations. This work was transitioned to ESP on September 11, 2016.
WO-LT-0092 AMD 1	Power Transmission Expansion and Connectivity (PTEC) Program Quality Assurance (QA)	Tetra Tech provided Quality Assurance services to the Arghandi, Sayedabad, and Ghazni Transmission Lines and Substations projects. Part of the QA activities included the development and release of a tender for tower bolt torque testing and tower climbing inspection. The bidder selected initiated the torque testing. Tt site inspectors completed daily reports on the torque testing. This work was transitioned to ESP on September 11, 2016.
WO-LT-0092 AMD2	Afghanistan Power Infrastructure Construction Management Services (CMS)	Tetra Tech provided CMS to the Arghandi, Sayedabad, and Ghazni Substations and Transmission Line projects. In 2016, significant progress was made on the Transmission Line; 85 km of stringing was achieved, 415 towers were erected and 422 tower foundations were completed. Construction activities at the substations continued for equipment foundations and the Control-switchgear buildings. This work was transitioned to ESP on September 11, 2016.
WO-LT-0093	Kajaki Hydroelectric Power Plants Construction Management Services	Tetra Tech received full NTP on November 21, 2015. Tt AESP took over the role of USAID's and DABS' Owner's Engineer to provide QA and CMS oversight services of the rehabilitation of the turbines at Kajaki Dam. Roles also included full responsibility for camp security, logistics, and base life support (BLS). As Owner's Engineer, AESP: reviewed submittals, provided engineering recommendations and QA oversight, attending weekly meetings, and coordinated daily on all onsite activities. Due to Tt's oversight the active construction activities were completed on schedule on Sept 31, 2016. The site began demobilization and final contractual closeout has commenced.
WO-LT-0093 AMD 1	Operations and Maintenance Sustainability Plan for Kajaki Hydroelectric Power Plant	USAID pared down the scope of this WO to only provide an Operational Evaluation for Kajaki HPP. AESP submitted the WP and EB on August 27, 2016 and received NTP on the same day.
WO-LT-0093 AMD 2	Kajaki Hydro Power Plant Unit 3 Assessment and Rehabilitation Plan	Tt conducted an initial assessment of the Unit No. 3. Tt submitted the report of the initial assessment of Unit No.3 and library of technical assessments to USAID on 08/16/2016.

1.2 KEY ACTIVITIES PLANNED FOR THE NEXT REPORTING PERIOD

Tetra Tech transitioned many of the activities of AESP to the Engineering Support Program (ESP) and will continue to close and/or transition any remaining work orders. Table 1.2 below describes the activities planned for the beginning of 2016. The FY2016 Quarter 1 Report will describe actual work performed in detail.

1.2.1.1 Table 1.2 Summary of Work Planned for Fiscal Year 2017

Number	Work Order Title	Summary of Work Planned
WO-LT-0082 AMD 1	American University of Afghanistan (AUAF) Women's Dormitory	AESP will complete the 99% drawings reports in early FY2017 Q1. If the drawings are complete, then the 100% design review will be completed under AESP. If not, the work will be transitioned to ESP early in FY2017 Q1.
WO-LT-0082 AMD 2	Sardar Kabuli Girls High School Fire Door Replacement Quality Assurance Services	Tt will continue to provide oversight of the installation and repair of the firedoors at Sardar Kabuli Girls High School. Tt expects that work will reach completion in Q1 of FY2017.
WO-LT-0082 AMD 3	American University of Afghanistan Women's Dormitory Quality Assurance	AESP will continue to submit daily, weekly, and monthly QA reports while monitoring the construction of the dormitory until this work transitions to ESP.
WO-LT-0093	Kajaki Hydroelectric Power Plants Construction Management Services	Tetra Tech will proceed with contractual closeout for the rehabilitation of Unit 2. Additionally, Tt will maintain logistics, security, and BLS support for the Kajaki HPP dam.
WO-LT-0093 AMD 1	Operations and Maintenance Sustainability Plan for Kajaki Hydroelectric Power Plant	AESP will submitted an Operational Evaluation for Kajaki HPP in the beginning of Q1 of FY2017.
WO-LT-0093 AMD 2	Kajaki Hydro Power Plant Unit 3 Assessment and Rehabilitation Plan	AESP will submit the technical scope of work (Section 6) and complete RFP for bid in the beginning of FY2017.

1.3 LESSONS LEARNED

In accordance with the contract, AESP submits an evaluation form after the completion of all work orders in order to obtain feedback to help improve performance on future work orders for this project. This quarter, AESP submitted 24 work order evaluations. The count includes three unreturned evaluations from FY 2015 and two midway evaluations. AESP received 16 work order evaluations during this year. Within the returned evaluations, one was marked exceptional, eight were marked above average, six were satisfactory, and one did not receive a rating. These evaluations form the basis of Tt's analysis for lessons learned and allow for continuous improvement of AESP's work. From the returned evaluations AESP excelled in quality of work and documentation and reporting. AESP realized the need for improvement in schedule. As schedule will become ever more important in the implementation phase of these projects, Tt is making a concerted effort to improve timing and schedule in ESP. The Project Controls Department will take on more internal efforts to ensure deliverables are submitted on time. Overall, Tt will strive to maintain the same level of excellence USAID has become accustomed to during AESP in ESP.

1.3.1 Evaluations/Assessments/Audits

On March 9, 2015, Tt AESP received notification of an upcoming audit for FY2014 and FY2015 incurred costs. In Q3 and Q4, Davis Associates contacted AESP, requesting documents for the audit. AESP complied with the Auditors' requests by providing documents and hosting an auditor for a field audit in Tt's home office. Davis provided a draft findings report to AESP and AESP provided a subsequent response. AESP is waiting for an official findings report from Davis Associates and will continue to cooperate with the auditors and USAID in FY2017.

Additionally, AESP received two Contractor Performance Assessment Report (CPARS) evaluations during this reporting period. Tt provided responses for both evaluations and received final evaluations for the time periods of September 4, 2012 to April 19, 2015 and April 20, 2015 through April 18, 2016. For the 2012 – 2015 CPARS, AESP received a rating of very good for quality and satisfactory for Schedule, Cost Control, and Management. For the 2015 – 2016 CPARS, AESP received ratings of satisfactory for Quality and Schedule and very good for Cost Control and Management.

1.3.2 Monitoring and Evaluation (M&E)

The primary goal of this project is to provide essential engineering support to the USAID Afghanistan Mission through a variety of activities and projects. As AESP acts as an extension of USAID in many of these activities, AESP's ability to monitor and evaluate our direct impacts on the beneficiaries of these programs is somewhat limited. Indicators, targets and results are provided below:

1.3.2.1 Table 1.3 Monitoring and Evaluation

Number	Indicator	FY 2016 Target	FY 2016 Results
I-1	Person hours of training completed in technical energy fields supported by USG assistance	100 hours	1388 hours
I-2	Number of days of USG funded technical assistance in technical energy fields provided to counterparts of stakeholders	100 days	464 days
I-3	Percent of all contracts awarded for commodities and equipment that are fixed price.	100%	100%
I-4	Percent of all other types of contracts (i.e. services) awarded that are fixed-price.	100%	100%

2.0 COLLABORATION WITH GIROA, OTHER DONORS, OR OTHER USAID PROJECTS

2.1 LINKS WITH RELEVANT GIROA MINISTRIES

Tt AESP collaborated with DABS on numerous projects, including the NEPS-SEPS connector, Salang Tunnel Substation, and electrical equipment manufacturing facility assessments. In addition, Tt AESP provided assistance to, and coordinated with, DABS commercial contractors: GFA Consulting Limited, Phoenix Ltd., KEC International Contractor, METAG construction, and 77 Construction Company.

2.2 LINKS WITH OTHER DONOR AGENCIES

AESP continues to take direction from USAID when coordinating with other donor agencies. In 2016, AESP collaborated with United States Army Corps of Engineers (USACE) and the Asian Development Bank (ADB).

2.3 LINKS WITH OTHER USAID PROJECTS

No significant events or activities to report during the year.

3.0 MANAGEMENT AND ADMINISTRATIVE ISSUES

3.1 PERSONNEL

AESP had significant changes in staffing in Fiscal Year 2016. With the onset of WO-LT-0092 and WO-LT-0093, AESP had a large ramping up of staff to fill the new positions required for the WOs. The staffing increase was especially significant in the numbers of new Engineers, Inspectors, and Operations employees to staff the new satellite offices in Kajaki and Kandahar. New hires peaked in Q2. A complete list of staffing changes is found in Table 3.1 below. Figure 3-1 below illustrates AESP's trends in hiring over Fiscal Year 2016.

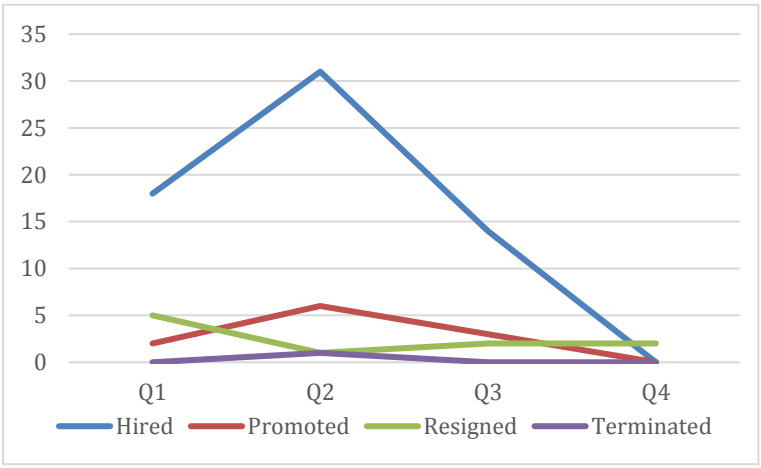


Figure 3-1 AESP Staffing Trends by No. of Employees

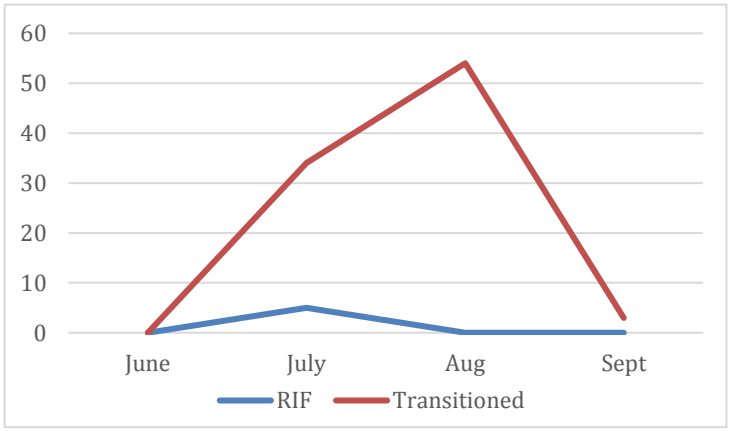


Figure 3-2 AESP to ESP Transition by No. of Employees

Additionally, in order to provide a smooth transition to the new priorities of ESP a small number of staff received a Reduction of Force (RIF) Notifications and left the project. Accordingly, as ESP began receiving NTP for Job Orders (JO), AESP staff transitioned from AESP to ESP. Nonetheless, in order to maintain steady support on AESP projects, ESP staff and Tt Home Office Support and STTAs provided continual support of AESP work. Figure 3-2 below illustrates the number of staff that transitioned to ESP throughout the end of FY2016.

3.1.1.1 Table 3.1 FY 2016 Staffing Changes

Transmission Line Engineer	LTTA	Hired
Administration Manager	LTTA	Hired
Kajaki Dam Site Manager	LTTA	Hired
Kandahar Operations Manager	LTTA	Hired
Controls Engineer	LTTA	Contract Ended
Electrical Engineer	LTTA	Contract Ended
Technical Services Manager	LTTA	Extended leave then returned as DCOP
Electrical Site Inspector	LN	Hired
Electrical Site Inspector	LN	Hired
Electrical Site Inspector	LN	Hired and promoted to Dep. CMS Dir.
Project Site Inspector	LN	Hired
Project Site Inspector	LN	Hired
Project Site Inspector	LN	Hired
Project Site Inspector	LN	Hired
Project Site Inspector	LN	Hired
Electrical Engineer	LN	Hired
Electrical Engineer	LN	Hired
Electrical Engineer	LN	Hired
Electrical Engineer	LN	Hired
Civil Engineer	LN	Hired
H&S Site Inspector	LN	Hired
MIS Admin Assistant	LN	Promoted to Deputy MIS Manager
Civil Engineer	LN	Received SIV
Cleaner	LN	Received SIV
Kitchen Helper	LN	Received SIV
Chef	LN	Received SIV
Admin Assistant	LN	Resigned
Transmission Line and Substation Engineer	LTTA	Hired
Project Controls Specialist	LTTA	Hired
Sr. Kajaki Mechanical Engineer	LTTA	Hired
Sr. Kajaki Hydro Engineer	LTTA	Hired
Health and Safety Specialist	LTTA	Hired
MIS Manager/Technical Writer	LTTA	Transitioned to interim Kajaki MIS Mgr.
MIS Manager/Technical Writer	LTTA	Mobilized
Energy Lead/Planning & Design (P&D) Mgr	LTTA	Transitioned to DCOP Kajaki Dam CMS

Energy Lead/P&D Manager	LTTA	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Subcontracts Manager	LN	Hired
Subcontracts Specialist	LN	Hired
Chief of Maintenance	LN	Hired
HSE Inspector	LN	Hired
Kandahar Procurement Specialist	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Kajaki Base Life Support Staff	LN	Hired
Cook	LN	Promoted to Administrative Assistant
Intern	LN	Promoted to Jr. Civil Engineer
Intern	LN	Promoted to Jr. Civil Engineer
Intern	LN	Promoted to Jr. Electrical Engineer
Financial Analyst	LN	Resigned
H&S Project Inspector	LN	Terminated
Deputy Chief of Party	LTTA	Hired
Kajaki Fuels Manager	STTA	Hired
Interim Kajaki MIS Manager	STTA	Demobilized
DABS Liaison	LTTA	Demobilized
Kajaki Dam DCOP	LTTA	Demobilized
Sr. Kajaki Mechanical Engineer	LTTA	Promoted to Kajaki Dam DCOP
Dep Dir. CMS/DABS Liaison	LN	Hired
Project Site Inspector	LN	Hired

Project Site Inspector	LN	Hired
Project Site Inspector	LN	Hired
H&S Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Kajaki Site Inspector	LN	Hired
Project Cost Scheduler	LN	Hired
Admin Assistant	LN	Resigned and new staff member was hired
Admin Assistant	LN	Hired
HR Manager	LN	Received SIV and new HR Mgr. was hired
Cook	LN	Hired
Facilities Manager	LN	Promoted to Facilities and External Affairs Manager
Project Inspector	LN	Promoted to Senior Project Inspector
Electrical Engineer	LN	Received SIV
Civil/Structural Engineer	LN	Received SIV

3.2 ADAPTION OF THE ACTIVITY

This year solidified AESP's shift in primary focus from design work to QA and CM services. WO-LT-0092 and WO-LT-93 saw a ramp up of staff and activity to support USAID's implementation efforts in large-scale energy projects. Additionally, AESP had a large adaption in preparation to transition ongoing tasks to ESP and closeout of the AESP. Since NTP on the first Job Order of ESP on July 23, 2016, Tt staff has worked to ensure that workload is maintained during the transition.

3.3 MODIFICATIONS AND AMENDMENTS

USAID did not issue any modifications nor amendments to the contract in Fiscal Year 2016. Tetra Tech expects a final modification once the final LOE realignment is approved for the contract. AESP will submit a Level of Effort Realignment early in the first quarter of 2017.

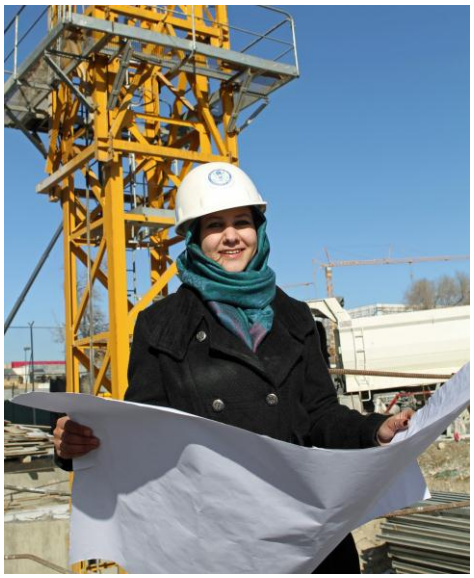
4.0 SUCCESS STORIES

Following are Tetra Tech AESP's Success Stories for FY2016, which discuss the DABS-USAID Coordination Retreat, Gardez to Khost Road Program, the Women's Internship Program, and the rehabilitation of Kajaki HPP.

USAID | AFGHANISTAN
FROM THE AMERICAN PEOPLE

SUCCESS STORY
From Intern to Project Engineer

USAID is providing opportunities for women engineers to manage infrastructure projects



Mariam Safi joined Tetra Tech AESP through AESP Afghan Women Internship Program in 2013.

Mariam joined Tetra Tech AESP through AESP Afghan Women Internship Program in 2013. This internship program is for fourth year engineering students.

U.S. Agency for International Development
www.usaid.gov

USAID is empowering women to excel in the field of engineering and architecture with the Afghan Women Internship Program, which began in 2011. This program provides the opportunity for women in their last year of engineering studies to intern at a USAID partner's engineering firm. This program provides a foundation through which graduating interns can launch their engineering careers.

Interns are given practical knowledge in engineering through: software training, labs, shadowing activities, personal instructions from professional engineers, and site visits. The internship provides the women with technical knowledge and experience which is lacking in their formal education, thus, these women have the skills and knowledge to compete for jobs when they graduate.

As part of this program, interns receive a resume building and interview preparation training, during which, interns are coached on important interviewing skills, and work to improve their resumes with the help of expatriate advisors. Following this training, the interns are invited to interview for a full-time position at a USAID partner's engineering firm.

Ms. Mariam Safi started as Civil Engineering Intern with the Afghan Women Internship Program in January 2013. Her outstanding performance as an intern, and during the interviewing process, allowed her to be selected as a Civil Engineer in January 2014. As a result of her stellar performance in the Civil Engineering department, she now manages the submittal review process of the Gardez-Khost Road Phase IV project, attending client meetings, managing budgets, resolving design and development problems, and reviewing and approving project drawings.

"USAID supports all Afghan women, and the Internship Program gave me the opportunity to learn to be a real engineer, and to prove my skills in Afghanistan, where female engineers are often dominated by male engineers" Mariam Safi, Civil Engineer and former intern.

Successful graduates of the internship program have gone on to work with USAID, the Ministry of Energy and Water (MoEW) of Afghanistan, and private engineering companies as a result of this important USAID initiative.

USAID | AFGHANISTAN
FROM THE AMERICAN PEOPLE

SUCCESS STORY
Quality on improved Gardez - Khost Road

GK Road will provide high speed connection for vehicles from Khost to Gardez, Kabul, and the rest of Afghanistan.

[Photo: Tetra Tech AESP]

A completed causeway along GK road assists in keeping heavy water flow off of the road and increase the design life of the GK road.

Increased access through the improved GK road will provide increased economic opportunities and additional security to the Paktia and Khost regions.

Formerly a dirt road, damaged by heavy trucks, flood, and landslides, the Gardez – Khost (GK) Road did not adequately service the transport needs of Eastern Afghanistan. This road which connects Gardez, capital of Paktia province, with Khost City, capital of the Khost province, has significant strategic importance. The poor quality of this road posed numerous challenges for Afghans moving between the areas and surrounding provinces, and limited the transport of goods.

USAID has been working with various partners to construct a 101-kilometer road between the towns of Gardez and Khost. While Phase I, Phase II and Phase III sections of the roadway were previously completed, the final piece of the GK road is now completed.

Gardez-Khost Road Phase IV is a USAID construction project for the remaining 25 km of the road, and for the bridges which connect the Paktia and Khost Provinces in Southeast of Afghanistan. USAID has funded the planning, design, construction for the remaining 25 km, including repair of four bridges, and construction of two new bridges on this route.

USAID's Afghanistan Engineering Support Program provided engineering oversight for this construction – reviewing design drawings, as-built submittals and product data submittals for contract compliance. This additional effort by USAID ensured that construction was completed according to contract specifications, and was on-time and on-budget.

Construction on Phase IV included 451 different structures in order to minimize water damage by keeping water off of the surface. As water on or under a roadway is the single most significant cause of roadway damage, these structures will increase the design life of the road.

The improved Gardez-Khost road now provides a high speed connection for vehicles traveling from Khost to Gardez, Kabul, and the rest of Afghanistan. Approximately 3,000 vehicles use the road every day. This increased access from the Paktia and Khost provinces to the rest of Afghanistan will result in improved economies and security benefits, as transportation along this route becomes more achievable and less risky.

USAID | AFGHANISTAN
FROM THE AMERICAN PEOPLE

SUCCESS STORY

USAID-DABS Coordination

[Photo: Tetra Tech AESP]

DABS and USAID worked together to ensure that a functioning circuit breaker was installed at the Kajaki Hydroelectric Power Plant (HPP).

"…DABS and USAID were able to restore the supply of power to universities, schools, hospitals and family homes within five days of the outage."

A one day coordination retreat between USAID and Da Afghanistan Breshna Sherkat (DABS) was held on January 23, 2016 to promote partnership and increase collaboration between the two parties. The retreat offered DABS the opportunity to identify specific challenges to performance, and develop action plans to address each area of concern and establish Measures of Effectiveness (MOEs) to track results.

During the retreat, DABS participants discussed their long term vision for success and lessons learned from previous experiences. USAID participants shared ideas and strategies for increasing transparency at DABS and strengthening communication.

These actions will contribute to providing improved electric power services to Afghanistan, as DABS and USAID continue to work together to increase domestic power production.

Organized and facilitated by USAID's Afghanistan Engineering Support Program (AESP), the retreat established a strong foundation for future collaboration between DABS and USAID.

The benefit of increased coordination between the two has been visible since the retreat, in regular communication and support of future energy projects. Another advantage of this improved partnership is the ability of DABS and USAID to respond rapidly to urgent energy needs.

An example of this rapid response was seen on June 26, 2016, when one of the circuit breakers at the Kajaki Dam caught fire, cutting off power to the people of Kandahar and Helmand provinces.

Within hours, DABS located a spare circuit breaker that was being stored at one of their warehouses in Kandahar. After locating the replacement parts, DABS coordinated with USAID to transport all necessary replacement components on the helicopters being used for the USAID Kajaki Dam project. Additionally, two DABS engineers were flown to Kajaki in these helicopters to remove the broken circuit breaker and install the replacement.

Through the strong partnership and comprehensive coordination established by the retreat, DABS and USAID were able to restore the supply of power to universities, schools, hospitals and family homes within five days of the outage.

This collaboration ensured that 105,000 Afghans in Kandahar and Helmand provinces had electricity during Eid-ul-Fitr.

USAID DELIVERS STABLE ELECTRICITY TO SOUTHERN AFGHANISTAN

Completion of the Kajaki Hydroelectric Power Plant Unit 2 Ends Rolling Blackouts in the Region

Since electricity was introduced to Afghanistan, the almost one million residents living in southern Afghanistan have endured unreliable access to electric power. Most residents received electricity for only four to five hours per day. Power quality was poor and its availability unpredictable, making most of the population unable to rely on electricity to run their businesses and households. This all changed on September 30, 2016, when USAID finished a project almost 60 years in the making: completion of the Unit 2 Installation at the Hydroelectric Power Plant (HPP) located at the Kajaki Dam.

AMERICAN COMMITMENT

Kajaki Dam is one of the largest dams in Southern Afghanistan. It is used for both crop irrigation and to provide power to the surrounding provinces of Helmand and Kandahar. At full capacity, the power plant will produce 51.1 megawatts of power.

The Kajaki Dam was first built by American contractors in 1956. Soon after, construction began on a hydroelectric power plant located at the site. The contractors commissioned turbine generators 1 and 3 in 1975, however they were unable to install turbine Unit 2 due to political instability. From 1975 through today, Units 1 and 3 remained operational, but the effects of 40 years without proper

maintenance became readily apparent. In 2005, USAID revived its attention to the installation of the Turbine Unit 2 and procured a new turbine along with equipment to upgrade Turbines 1 and 3. In 2008, British troops, in the largest British mobilization since WWII, delivered the new turbine to the site. In 2014, USAID provided on-budget funding through the National Electric Utility of Afghanistan, Da Afghanistan Breshna Sherkat (DABS), to provide installation of Unit 2 and modernization of the existing turbines.

SUBSTANTIAL COMPLETION

USAID and DABS took on the challenge to complete the installation of the 18.5 MW hydroelectric Turbine Generator Unit 2, as well as the new Kajaki HPP controls, switchgear, metering and protection. The Kajaki HPP is located in a remote area that is strife with insurgency. After a full security evacuation in late 2015, USAID was at a crossroads as to how to finish the project.

In February 2016, with a new construction management team and logistics and security plan, construction restarted at the Kajaki HPP site. The construction schedule was accelerated into an eight month time frame. During those eight months, over 679 tons of cargo and construction equipment, were delivered to the site. This including over 183 tons of concrete for the installation of the turbine concrete encasement. Against all the odds, the upgraded Kajaki HPP became fully operational on September 30, 2016 and was handed over to DABS for operation.

IMPACT

The completion of the Kajaki HPP is a major milestone in USAID's mandate to provide stable electricity to a large, unserved portion of Afghanistan's population. The Kajaki project provides electric power stabilization in the Southeast Power System which, when complete, will connect to the rest of the country. Thus making a robust and stable electric power grid throughout the northern, eastern, and southern portions of the country.

Furthermore, the Kajaki HPP project serves as a model for local and international collaboration and cooperation. Completion of this project would have been impossible without the teamwork of engineers, construction contractors, manufacturers, and security teams comprised of 24 nationalities and represented across 7 Afghan Ministries and government entities.

Most importantly, the completion of this project impacts the everyday lives of approximately one million residents in the region. These people can now enjoy the modern convenience of reliable and stable electricity to access clean water, develop small businesses, and grow local commerce. The flick of a light switch offers hope to a long suffering people for prosperity and a connection to the outside world. This hope provides viable economic alternatives to insurgency in a region ravaged by ever-present instability and promises a brighter tomorrow for the people of Southern Afghanistan.

USAID Afghanistan

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